THURSTON COUNTY NOXIOUS WEED FACT SHEET

Poison Hemlock *(Conium maculatum)*

Description: Poison hemlock is a member of the parsnip or carrot family (umbelliferae). This species is a biennial, producing large rosette leaves during the first year of growth. During the second year the plant may grow to a height of up to 12 feet. Except for its size it closely resembles wild carrot, a common plant found throughout Thurston County. Poison hemlock has hollow, hairless stems (leaf canes) with purple blotches. It is a biennial, reproducing by seeds only. Leaves are fern like and up to 1 1/2 feet long. The flowers are white and develop into green, ridged seed capsules that eventually turn brown. Each plant is capable of producing up to 38,000 seeds, which can remain viable in the soil for up to 6 years.

Impacts: The entire plant is toxic to humans and animals. It contains the poisonous alkaloid coniine and other alkaloids. Most poisoning occurs because the leaves are mistaken for parsley, the roots for parsnip and the seeds for anise. Poisoning of humans have occurred after the ingestion of seeds, leaves and roots and even as a result of blowing through the hollow stems when used as whistles or peashooters. The seeds, however, are the most toxic part of the plant. "Poison hemlock remains toxic for several years after being pulled, and it is wise not to leave the dead plants where they might be eaten by wildlife or children" (Parsons 1973).

Control Options: Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

► **Cultural / Habitat**

Follow-up planting of any bare or disturbed area is recommended to provide competition with hemlock seedlings that will emerge from the seed bank in the soil at infestation sites.

► **Manual / Mechanical**

Hand removal is recommended for small infestations (for example 10 to 20 plants or more if the soil is loose enough to make them manageable). When pulling the plants, dig down and remove the entire taproot. Be sure to wear gloves and to wash your hands after working with poison hemlock. Manual control efforts can be successful, but we have found that the disturbance of soil resulting from manual removal methods encourages germination of seeds at infested sites. Solid carpets of hemlock seedlings are not uncommon. Cutting the poison hemlock is an ineffective option for control, since the plants do not die and re-growth will occur, plants send up new seed stalks in the same season the cutting occurs.

► **Biological**

The Defoliating Hemlock Moth (*Agonopterix alstroemeriana*) is available and has been released in Thurston and other counties in Washington but results have been highly variable and almost completely ineffective in Thurston County. Additionally, biocontrols are dependent on heavy densities of undisturbed host plants, and Thurston County's goal is to control all Poison Hemlock wherever it is found.

► Chemical

Spot spraying with an herbicide containing the active ingredient ***glyphosate*** (example: Roundup Pro®, Eliminator Weed and Grass Killer®, etc.) can be used to treat poison hemlock effectively. Some glyphosate products have a supplemental label for treating poison hemlock by an alternate method known as "stem injection". This method is especially useful where there are sensitive plants nearby. One product known to have this supplemental labeling is Roundup Pro®.

Due to recent health reviews, Thurston County recognized some scientific studies have concluded the use of glyphosate products have carcinogenic potential. The risk of spot spraying with these products is considered to be low provided the applicator uses personal protection equipment which includes chemically resistant gloves in addition to long sleeve shirt, long pants, socks and shoes and all other label precautions are followed.

Imazapyr (example: Polaris® or Alligare™ Imazapyr 2SL) is also effective in controlling infestations of poison hemlock. Imazapyr is a non-selective herbicide and may damage or kill any other plants that it contacts, including grass. It may also leave persistent bare ground in the treatment area. This can be minimized by using only as directed, spraying at the recommended strength and no more than necessary to wet the surface of the leaves and stems. Products containing the active ingredient imazapyr are considered "moderate in hazard" by Thurston County's pesticide review process for the potential for chemical mobility and persistence.

Foliar applications:

- For spot applications of either glyphosate or imazapyr, prepare herbicide by following label instructions at rates listed below. Spray each plant thoroughly on the stems and leaves, enough to be wet but not dripping. Spot application means the herbicide is applied only to the poison hemlock plants, and not on the surrounding plants or soil.
- Glyphosate is non-selective, and will injure any plants that it comes in contact with, including grass.
- Imazapyr is also non-selective, and will injure any plants that it comes in contact with. Do not use on lawns, walks, driveways or similar areas where roots of desirable vegetation may extend and be exposed to potential injury.
- Keep people and pets off treated areas until spray solution has dried.

Hollow stem injection using glyphosate:

- Individual poison hemlock plants may be treated by injecting up to 6 milliliters of a 5% solution of Roundup Pro® with a hand-held injection device directly into the hollow stem 10 to 12 inches above root crown.
- Mark each plant when injecting it, to avoid retreating the same plant.

The following instructions are for concentrated products which will be mixed down to a specified dilution rate. Similar products may be significantly different in strength. Be sure to read your label carefully, and make adjustments to rates accordingly.

Timing: Poison hemlock should be controlled whenever it is found when the plant is actively growing and prior to seed production. Monitor the area in following years to check for new plants from the existing seed bank.

Pollinator Protection: To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treating may be an option in some circumstances. Use of the injection method would also have minimal effect on pollinators. If treatment must occur during the blooming period, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.

Product/Method	Rates	Mix
Glyphosate / Spot Foliar Roundup Pro® Eliminator Weed & Grass Killer®	2%	Add 2.6 oz (5.2 Tablespoons) concentrated product per gallon of water.
Glyphosate / Injection Roundup Pro®	5%	Inject one leaf cane per plant 10 - 12 inches above root crown with 6 mL of a 5% solution of this product. Use a cavity needle and push it into the stem center, then slowly remove it as the product is injected into the stem.
Imazapyr / Spot Foliar Polaris® *Alligare™ Imazapyr 2SL*	2%	Add 2.6 oz (5.2 Tablespoons) concentrated product per gallon of water.

READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS. Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

REFERENCES:

University of Illinois Extension IPM Bulletin, Article 8/May 19, 2006; http://bulletin.ipm.illinois.edu/article.php?id=524

"Indiana Plants Poisonous to Livestock and Pets", Purdue University Cooperative Extension Service Fact Sheet;

"Highly Toxic Poison Hemlock, a Threat in Newly Urbanized Areas" by Mauricio Espinoza, Ohio State University Extension

USDA/ARS Poisonous Plant Research Laboratory Fact Sheet 415;

Thurston County Noxious Weed Control
11834 Tilley Road S.
Olympia, WA 9812
Phone: 360-786-5576
T.D.D. 360-754-2933
tcweeds@co.thurston.wa.us
www.co.thurston.wa.us/tcweeds

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